

phase. Further, according to claim 1, the wax dispersant is present in an amount sufficient to provide at least meta-stability to the dispersion and the dispersion has a viscosity at 25°C of less than about 50,000 centipoise. Claim 1, as amended, also now calls for the dispersion to be at least 25% by weight water. Claim 17 is directed to a method for crystal modification of petroleum or a petroleum-derived liquid. According to the method of claim 17, the dispersion of claim 1 is added to the petroleum or petroleum-derived liquid.

The micellar dispersion mentioned by Fischer et al. is not the additive dispersion as in the subject claims, but the medium being treated by the additive. The dispersion is not being added to petroleum or a petroleum-derived medium as called for in claim 17. The Fischer et al. patent discloses an additive that is applied neat or in solution in an organic solvent such as a hydrocarbon to either dry or wet crude oil. See, for example, col. 2, lines 29-38. The Fischer et al. additive is not a dispersion as called for in any of the subject claims. Water is not a carrier in the Fischer et al. additive as in the subject claimed invention. Moreover, an advantage of the subject claimed invention is that it incorporates the ordinarily solid or highly viscous crystal modifier composition in a workable form, and without substantial solvent waste. Thus, all pending claims call for the viscosity of the additive to be below about 50,000 centipoise. Fischer et al. neither disclose nor suggest any concern about the viscosity of their additive or medium being treated.

Therefore, Fischer et al. seem only to disclose and suggest what was identified in the Background portion of the subject specification as the troublesome prior art. That before the subject invention, crystal modifier additives were used neat, in which case they are hard to handle, or as solutions which require copious organic solvents. The subject inventors, however, have discovered that by incorporating the crystal modifier in the type of dispersion called for in the subject claims avoids these problems.

The disclosure of Fischer et al. of the admitted prior art of using crystal modifiers neat or in solution nowhere teaches or suggests this discovery by the subject inventors. And the disclosure by Fischer et al. that the crystal modifier disclosed therein can be used to treat micellar dispersions neither teaches nor suggests that the crystal modifier can be incorporated in an aqueous external dispersion to treat other media. First, the disclosure that crystal modification can occur within a dispersion does not suggest that the resulting dispersion in turn can cause

crystal modification in a medium to which it is added, particularly, when such addition would further dilute the crystal modifier.

Second, because Fischer et al. employ the crystal modifier at relatively low concentrations for efficacy in the dispersion itself, Fischer et al. nowhere teach or suggest one of the advantages discovered by the present inventors; namely, that relatively high concentrations of the crystal modifier can be used in the additive without unduly raising the viscosity of the dispersion, thereby allowing reduced waste of and contamination by solvents and other carriers. The new claims emphasize this distinction, calling for a crystal modifier concentration of at least about 10%, while Fischer et al. identifier the upper limit of the "inhibitor" concentration in the micellar dispersion as 10,000 ppm (i.e., 1%).

Claim 17 further distinguishes over the Fischer et al. patent by calling for the petroleum or petroleum-derived liquid to be treated by adding the dispersion (which contains the wax dispersant and the crystal modifier) to the petroleum or petroleum-derived liquid. By contrast, in the Fischer et al. patent, the wax deposition inhibitor (which the Examiner in the parent of this application apparently found to correspond to either the wax dispersant or crystal modifier in claim 17) is added neat or in an organic solvent to the dispersion to be treated. In the Fischer et al. patent, no dispersion (whether containing the wax dispersant and crystal modifier as called for in claim 17 or not) is added to petroleum or a petroleum-derived liquid as called for in claim 17. And because the dispersion in the Fischer et al. patent is the medium to be treated and not the additive for a medium to be treated, there would be no motivation then to add the Fischer et al. dispersion to yet another medium. The Fischer et al. patent nowhere suggests the method of claim 17.

Thus, claims 1 and 17 and the new claims are submitted to distinguish patentably over the Fischer et al. patent.

Each of the remaining claims depends from claim 1 or 17 and so is submitted to distinguish patentably over the Fischer et al. patent for the same reasons and in addition add further features of the dispersion and are submitted to distinguish further for those reasons as well. For example, several of the claims identify particular wax dispersants or crystal modifiers, or both, that do not correspond to any of the ingredients of the Fischer et al. components and are nowhere taught or suggested by Fischer et al. The claims, therefore, also clearly distinguish patentably over the Fischer et al. patent.

In the parent of the subject application, claims 1-8, 14, 15, 17-23, 29, 30 and 33 were rejected as being obvious over the Fischer et al. patent in view of the McClaflin patent. All cited claims differ from the teachings and suggestions of the Fischer et al. patent for the reasons discussed above. The McClaflin patent nowhere makes up for the deficiencies of the Fischer et al. patent as discussed above. Thus, claims 1-8, 14, 15, 17-23, 29, 30 and 33 are submitted to define patentably over the Fischer et al. patent, even if taken in view of the McClaflin patent.

In the parent of the subject application, claims 9-13, 16, 24-28 and 31 were rejected as being obvious over the Fischer et al. patent in view of the McClaflin patent, and further in view of the Karydas patent. All cited claims differ from the teachings and suggestions of the Fischer et al. patent for the reasons discussed above with respect to the previous rejection of claims 1-4, 14, 17-20 and 29. The McClaflin and Karydas patents nowhere make up for the deficiencies of the Fischer et al. patent as discussed above. Thus, claims 9-13, 16, 24-28 and 31 are submitted to define patentably over the Fischer et al. patent, even if taken in view of the McClaflin and Karydas patents.

Each of new claims 33-37 depends from either claim 1 or claim 17 and defines patentably over the references noted above for the same reasons as discussed above. In addition, however, new claim 33 emphasizes a further procedural distinction over the method of Fischer et al. In particular, new claim 33 calls for, prior to adding the aqueous external dispersion to the petroleum or petroleum-derived liquid, preparing the aqueous external dispersion by mixing together the wax dispersant and the crystal modifier to form an organic phase and then mixing the organic phase with water so as to produce the aqueous external dispersion. This preparation step further emphasizes the stark distinction between the method of Fischer et al. in which a copolymer is added neat or in simple organic solution to a micellar dispersion to treat that dispersion and that of the present invention in which an additive dispersion containing a wax dispersant and a crystal modifier is prepared and that dispersion is added to petroleum or a petroleum-derived liquid to treat that petroleum or petroleum-derived liquid. Fischer et al. nowhere teach or suggest that method of this invention.

New claims 34-37 call for the dispersion to contain an imidazoline corrosion inhibitor. As noted in the subject specification at page 16, lines 6-25, it has been discovered that when such corrosion inhibitors are incorporated into the subject dispersion, they not only inhibit corrosion, but help stabilize the dispersion as well. The art of record nowhere teaches or

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